PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Zhaocheng WANG et al.
U.S. Serial No.:	Filed Concurrently Herewith
Title of Invention:	PILOT PATTERN DESIGN FOR A STTD SCHEME IN AN OFDM SYSTEM

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PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Box Patent Application (35 U.S.C. 111)
Washington, D.C. 20231

Sir:

Before the issuance of the first Office Action, please amend the above-identified application as follows:

IN THE CLAIMS:

Please amend claims 4-7, 10, 12, 15 and 16 as follows:

4. (Amended) Transmitting device according to claim 1,

characterized in,

that pairs of first (20; 21) pilot symbols being adjacent in the time dimension are respectively orthogonal to the corresponding pairs (42; 43) of second pilot symbols.

5. (Amended) Transmitting device according to claim 1,

characterized in,

that pairs (20; 23) of first pilot symbols being adjacent in the frequency dimension are respectively orthogonal to the corresponding pairs (40; 46) of second pilot symbols.

6. (Amended) Transmitting device according to claim 1,

characterized in,

that the first and the second pilot symbols have a regular distribution in the time and the frequency dimension, whereby the second pilot symbols alternately have the identical and the inverse complex value of the corresponding first pilot symbol in the time as well as in the frequency dimension.

7. (Amended) Base station (1) of a wireless orthogonal frequency division multiplex (OFDM) communication system, comprising a transmitting device according to claim 1.

10. (Amended) Receiving device according to claim 8,

characterized in,

that the second pilot symbols alternately have the identical and the inverse complex value of the corresponding first pilot symbol in the time as well as in the frequency dimension so that the processing and the channel estimation is performed on the basis of an addition and a subtraction calculation of received pilot symbols.

12. (Amended) Mobile terminal of a wireless orthogonal frequency division multiplex (OFDM) communication system, comprising a receiving device according to claim 8.

15. (Amended) Channel estimation method according to claim 13,

characterized in,

that the second pilot symbols alternately have the identical and the inverse complex value of the corresponding first pilot symbol in the time as well as in the frequency dimension so that the processing and the channel estimation is performed on the basis of an addition and a subtraction calculation of received pairs of pilot symbols.

16. (Amended) Channel estimation method according to claim 13,

characterized in,

that, on the basis of the channel estimation result, either the STTD encoded signals from the first antenna means or from the second antenna means are further processed in the receiving device.

REMARKS

Claims 1-16 remain in the application. Claims 4-7, 10, 12, 15 and 16 have been amended to eliminate multiple dependencies. Attached hereto is a marked up version of the changes made to claims 4-7, 10, 12, 15 and 16 by the current amendment. The attached page is captioned **"Version with markings to show changes made."** The filing fee has been calculated based upon these amendments to the claims.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

4. (Amended) Transmitting device according to claim 1, ~~2 or 3,~~

characterized in,

that pairs of first (20; 21) pilot symbols being adjacent in the time dimension are respectively orthogonal to the corresponding pairs (42; 43) of second pilot symbols.

5. (Amended) Transmitting device according to ~~one of the claims 1 to 5~~ claim 1,

characterized in,

that pairs (20; 23) of first pilot symbols being adjacent in the frequency dimension are respectively orthogonal to the corresponding pairs (40; 46) of second pilot symbols.

6. (Amended) Transmitting device according to ~~one of the claims 1 to 5~~ claim 1,

characterized in,

that the first and the second pilot symbols have a regular distribution in the time and the frequency dimension, whereby the second pilot symbols alternately have the identical and the inverse complex value of the corresponding first pilot symbol in the time as well as in the frequency dimension.

7. (Amended) Base station (1) of a wireless orthogonal frequency division multiplex (OFDM) communication system, comprising a transmitting device according to ~~one of the claims 1 to 6~~ claim 1.

10. (Amended) Receiving device according to claim 8 ~~or 9~~,

characterized in,

that the second pilot symbols alternately have the identical and the inverse complex value of the corresponding first pilot symbol in the time as well as in the frequency dimension so that the processing and the channel estimation is performed on the basis of an addition and a subtraction calculation of received pilot symbols.

12. (Amended) Mobile terminal of a wireless orthogonal frequency division multiplex (OFDM) communication system, comprising a receiving device according to ~~one of the claims 8 to 11,~~ claim 8.

15. (Amended) Channel estimation method according to claim 13 ~~or 14~~,

characterized in,

that the second pilot symbols alternately have the identical and the inverse complex value of the corresponding first pilot symbol in the time as well as in the frequency dimension so that the processing and the channel estimation is performed on the basis of an addition and a subtraction calculation of received pairs of pilot symbols.

16. (Amended) Channel estimation method according to claim 13, ~~14 or 15,~~

characterized in,

that, on the basis of the channel estimation result, either the STTD encoded signals from the first antenna means or from the second antenna means are further processed in the receiving device.